

Dr: Wesam Ahmed

Prepared by: (The Web Warriors)

Fady Emad (Team Leader)

Mariam Gamal

Gannah Islam

Zeinab Ahmed

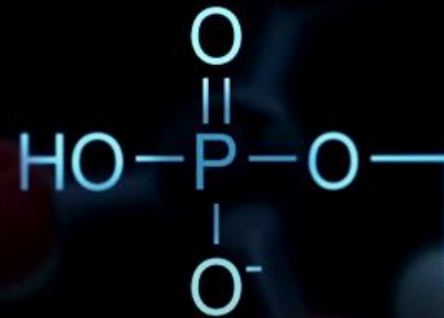
Mohraeel John

Mohamed Yasser

Poula Samy

Mina Montasser

Pharmacy Management & Medicine Checker



Important Note.

- All Documents and Details about the project will be On GitHub.

Feel Free to check it at anytime By clicking the following link:

[Pharmacy-Management-Project/Pharmacy Management Project at main · FadyEmad12/Pharmacy-Management-Project](https://github.com/FadyEmad12/Pharmacy-Management-Project)

Content:

- **Project Title.**
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Project Title and Problem Statement / Motivation

- **Project Title:**
Pharmacy Management & Medicine Checker System.
- **Problem Statement / Motivation:**
Managing a pharmacy manually is **time-consuming and error-prone**. Pharmacists often face challenges such as:
 - **Tracking** medicine stock
 - **Handling** customer prescriptions efficiently
 - **Recording** sales and profits
 - **Downloading** the Invoices of the sold items per day.
- Our project solves these issues by **automating pharmacy operations**, improving accuracy, saving time, and ensuring better customer service.

Project Goals / Objectives

- The main objectives of the Pharmacy Management System are:
- To provide **accurate tracking of medicines** in stock
- To **record and manage sales** efficiently
- To **generate reports** on profits, sales, and inventory
- To **make it very easy** for the customers to check the Medicines instead of Going to the Pharmacy.
- To **minimize human errors** in pharmacy operations
- To **Prepare the invoices** for the items are sold at anytime.

Tools and Technologies Used

1- Programming Languages & Frameworks

- **C#** – Main programming language for backend logic
- **.NET Core** – Framework for building scalable and secure backend applications
- **ASP.NET Web API** – To create RESTful APIs for handling database operations and communication between frontend and backend.

2- Database System

- **SQL Server** – Relational database to store medicine data, sales records, and other pharmacy-related information
- **Entity Framework (Database-First approach)** – Object-relational mapper (ORM) for easier database interaction using C# classes

3- Frontend / Client-Side

- **HTML5** – Structuring web pages
- **CSS** – Styling the application
- **JavaScript** – Adding interactivity and dynamic behavior to the frontend

4- Additional Tools & Technologies

- **Node.js** – For running frontend build tools or server-side scripts if needed
- **Visual Studio / VS Code** – IDEs for coding, and debugging.
- **Trello** – For Project Management
- **Whatsapp & GitHub** – Version control and project collaboration platform

Features / Functionality

1- Medicine Management:

- Add, update, delete medicine records
- Track stock quantity

2- Customer Interaction:

- **Customers can search for medicines** by name or type
- No customer data is stored or payments are taken

3- Sales and Billing:

- Record all sales by the pharmacist
- **Print invoices after recording sales**
- Automatically update inventory

4- Reports and Analytics:

- Generate sales reports
- Track profit and loss

5- User Authentication:

- Login system for pharmacists and admins
- Role-based access to ensure security

Development Process / Story

1- Planning: → Was Made on Trello and GanttProject.

The project started by carefully analyzing the needs of a typical pharmacy. We identified the **key tasks that needed automation**, including:

- **Managing** medicine stock efficiently
- **Recording** sales accurately
- **Allowing** customers to search for medicines easily
- **Generating** detailed sales and profit reports

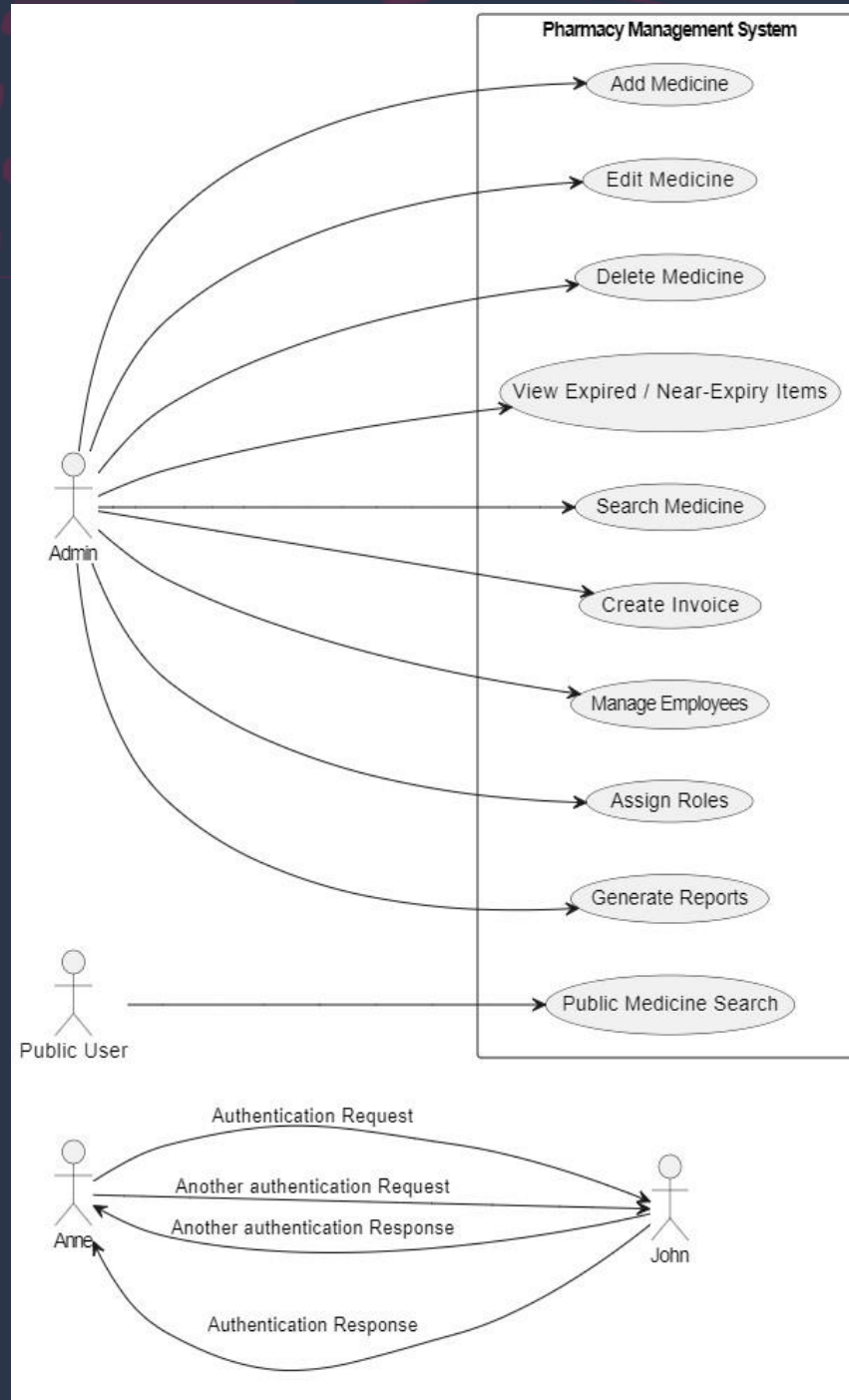
We also outlined the **roles of users** in the system – pharmacists as admins who manage the data, and customers who can search for medicines. This phase included sketching initial workflows and creating a **requirements document** to guide development.

2- Design:

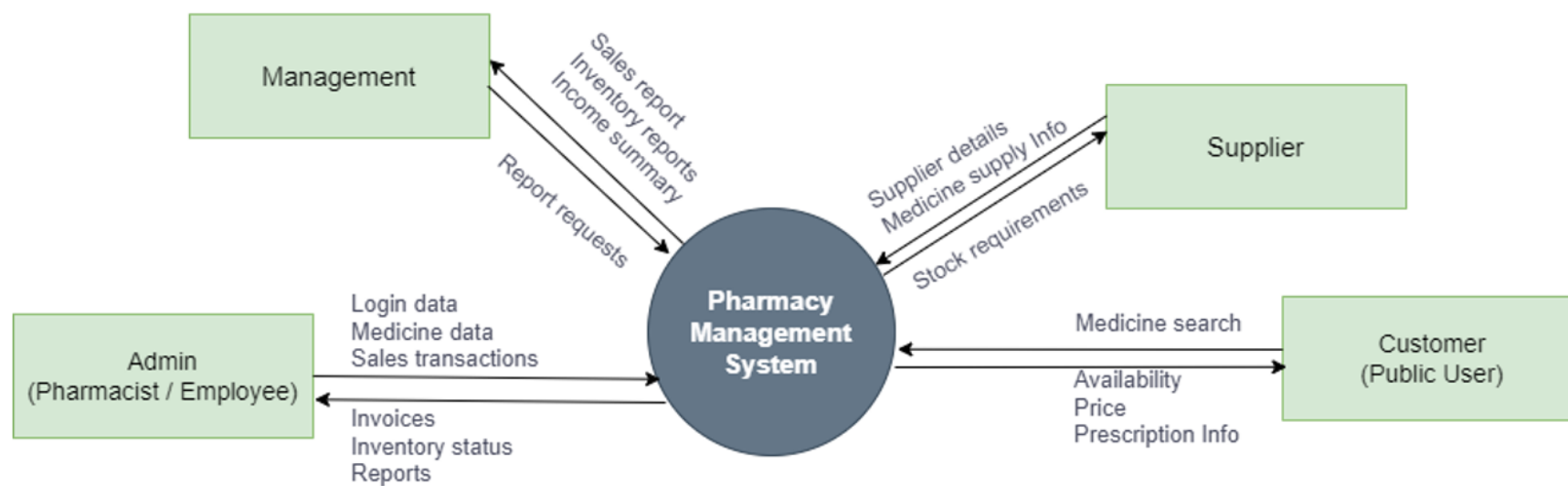
Once the requirements were clear, we moved to designing the system:

- **Created** a **relational database schema** to store medicines, stock quantities, and sales records efficiently. Tables were designed with proper relationships and constraints to maintain data integrity.
- **Developed** a **user-friendly interface design** that is simple for pharmacists to navigate and easy for customers to search for medicines.
- **Designed** forms for adding/updating medicines and **modules for recording sales**.
- **Planned** the **invoice printing module** to generate professional receipts automatically after each recorded sale.
- **Drew** flowcharts and diagrams to visualize **how each module interacts** with others, ensuring smooth integration.

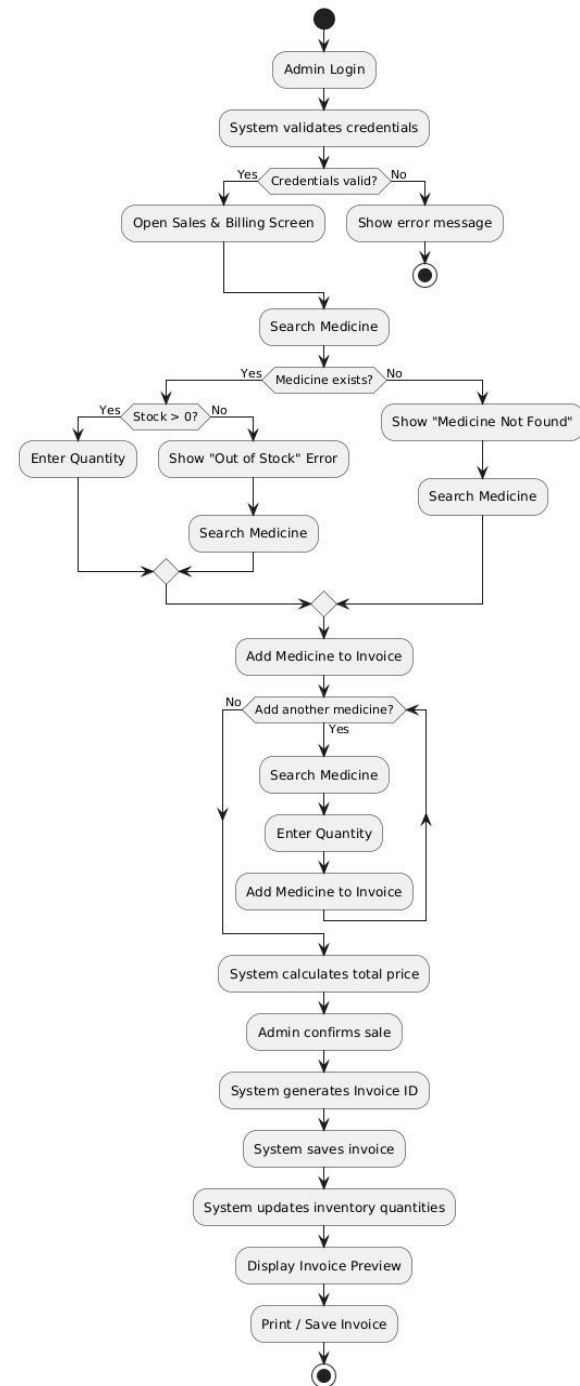
Use Case



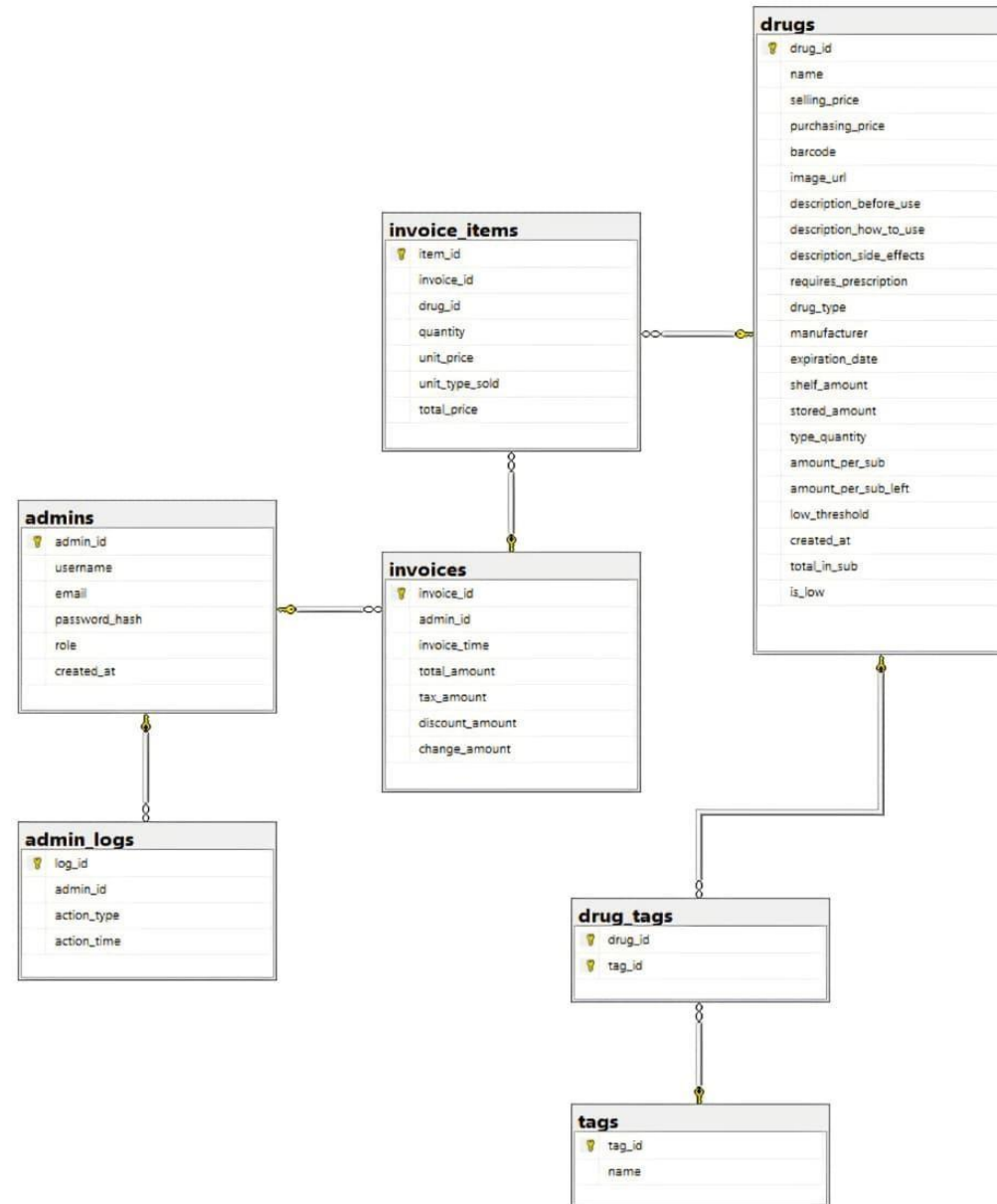
Context Diagram: Pharmacy management system



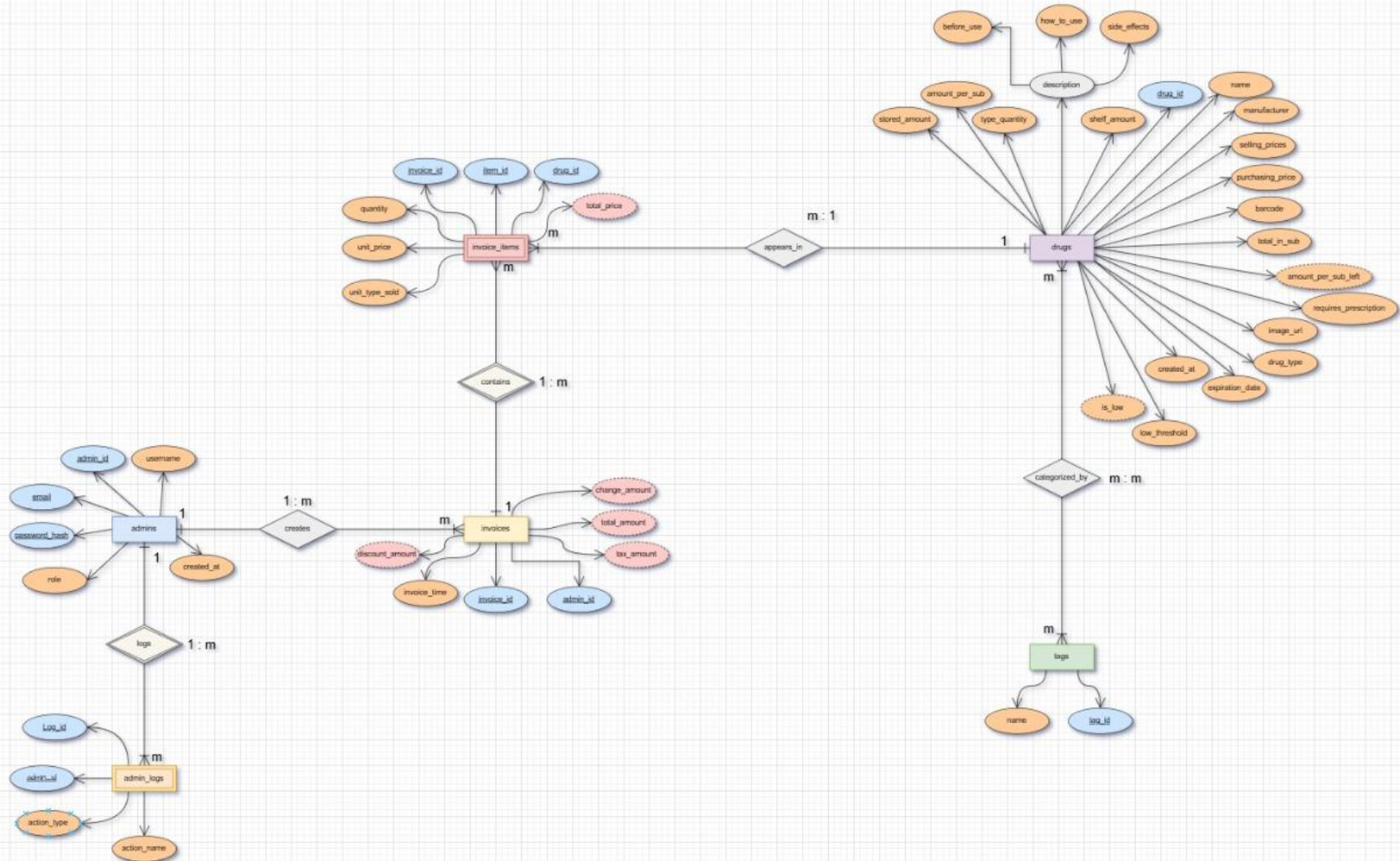
Pharmacy Management System - Medicine Sales Activity Diagram



Class Diagram



Entity Relationship Diagram (ERD) for the system



3- Implementation:

The system was developed in modular components to simplify coding and testing:

- **Inventory Module:** Allows adding, updating, and deleting medicines. Stock levels are automatically updated after each sale.
- **Sales Module:** Records sales, calculates totals, and integrates with the invoice printing feature.
- **Customer Search Module:** Enables customers to search for medicines by name or type without entering personal data.
- **Reporting Module:** Generates daily, weekly, and monthly sales reports for management review.
- During implementation, we applied **best coding practices:**
 - Modular code to make updates easier
 - Proper comments and documentation for each function
 - Input validation to prevent errors or invalid entries

4- Challenges & Solutions:

During development, we faced several challenges:

- **Challenge:** Accurate sales tracking and inventory updates.
Solution: Implemented SQL queries that automatically update stock quantities immediately after each sale and store complete sales history for reporting.
- **Challenge:** Ensuring the invoice prints correctly with all details.
Solution: Developed a dynamic invoice generation module that formats and prints invoices after each recorded sale, including medicine names, quantities, prices, and total amount.
- **Challenge:** Designing an interface that is **both easy for staff and customers**.
Solution: Used a clean layout with clear menus, search functionality for customers, and simple forms for pharmacists.

Project Outcome / Results

- **Reduces** manual work for pharmacists
- **Ensures** accurate tracking of medicine stock
- **Sales and billing** are faster and error-free
- **Generates** detailed reports
- **Invoices** can be printed after sales
- **Customers** can **quickly search** for medicines without entering personal information.


The top of the slide features a decorative header with a dark blue background. It contains several overlapping semi-circular shapes in a slightly lighter shade of blue. Some of these shapes are filled with concentric dotted lines, while others are solid or have concentric solid lines.

Screenshots from the Result of the Implementation

The top of the image features a dark blue header with a series of repeating geometric patterns. These patterns include solid dark red semi-circles, concentric dashed red arcs, and radial dashed red lines, creating a modern, abstract design.

Admin Side

← → ↻ ⓘ 127.0.0.1:5500/Login/index.html 🔑 ☆ 📄 ⬇️ M ⋮

 Pharmacy**marts**

admin

.....

Login

Visit website

←

→

↺

📄 127.0.0.1:5500/Dashboard/index.html

☆

📁

⬇️

Ⓜ️

⋮

👋 Hello, admin

🏠 Dashboard

💊 Medicines

👤 Admin

📄 Invoices

💻 Cashier

🚪 Logout

Dashboard Overview

🔄 Refresh Data

Monthly Sales

📅

748.5 \$

↑ 8% from last month

Annual Sales

📅

748.5 \$

↑ 15% from last year

Total Products in Store

📦

510

Available for sale

Close to Expiration

⚠️

0

2.02% from total products

Best-selling Products

Most sold products every month

Voltaren Emulgel

Barcode: 7611136155512

The Best

Panadol Baby & Infant Suspension

Barcode: 6221234567890

Second

Otrivin Baby Saline Spray

Barcode: 6229876543210

Third

Amoxil 500mg Capsules

Barcode: 6225554443332

Fourth

Low Stock Alert

Items that need restocking


127.0.0.1:5500/Cashier/index.html

☆ | 📁 | ⬇️ | M | ⋮

☰

Search item

Search




Panadol Baby & Infant Suspension

15.5\$

-

2


+



Otrivin Baby Saline Spray

12\$

Add




Amoxil 500mg Capsules

25\$

-

1


+



Tobrex Ophthalmic Solution

22\$

Add



Voltaren Emulgel

45\$

Add

Current Order

Panadol Baby & Infant Suspension

-

2

+

31.00\$

Amoxil 500mg Capsules

-

1

+

25.00\$

Total:

56.00 EGP

Cash in:

Change:

44.00 EGP

Check Out

Cancel

127.0.0.1:5500/Invoices/viewInvoice.html?id=1

☆🔖📄M⋮

Hello, admin

🏠 Dashboard

💊 Medicines

👤 Admin

📄 Invoices

💻 Cashier

🔓 Logout

Pharmacy

marts

Casher Name: admin

Date: 31/12/2025 20:13

Id	Item Name	Quantity	Unit price	Total
1	Panadol Baby & Infant Suspension	4	15.50 EGP	62.00 EGP
2	Otrivin Baby Saline Spray	1	12.00 EGP	12.00 EGP
3	Amoxil 500mg Capsules	3	25.00 EGP	75.00 EGP
4	Tobrex Ophthalmic Solution	1	22.00 EGP	22.00 EGP
5	Voltaren Emulgel	2	45.00 EGP	90.00 EGP
			Total	261.00 EGP

127.0.0.1:5500/Invoices/index.html

☆ | 🗂️ | ⬇️ | 👤 | ⋮

Hello, admin

🏠 Dashboard

💊 Medicines

👤 Admin

📄 Invoices

💵 Cashier

🚪 Logout

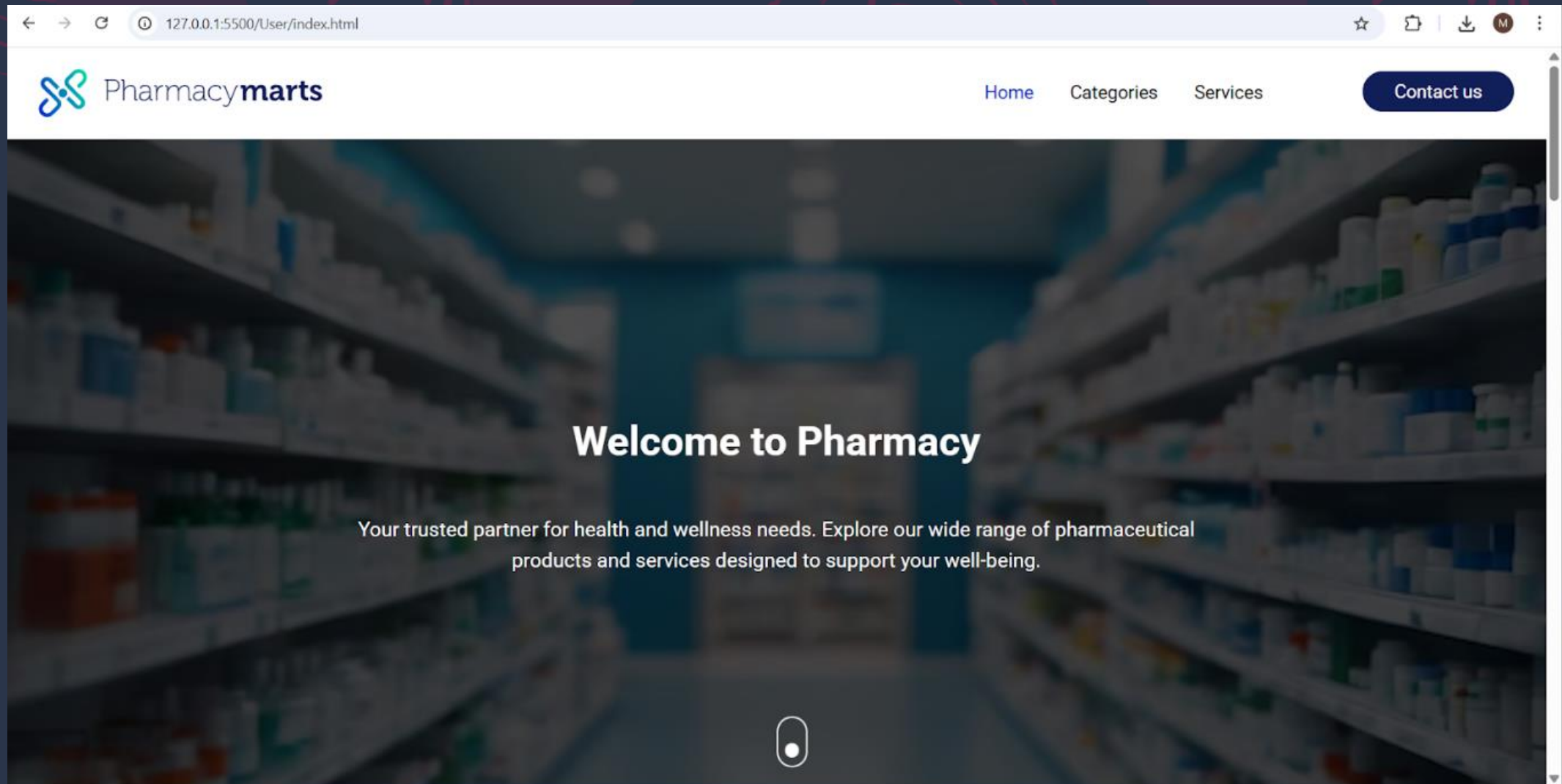
Search user

Search

Id	Admin Name	Total	Date	Action
1	admin	62.00 EGP	31/12/2025 21:56	<div>View</div>
2	admin	261.00 EGP	31/12/2025 22:13	<div>View</div>
3	admin	270.00 EGP	31/12/2025 22:23	<div>View</div>
4	admin	180.00 EGP	31/12/2025 22:42	<div>View</div>
5	admin	12.00 EGP	31/12/2025 22:42	<div>View</div>
6	admin	117.00 EGP	01/01/2026 00:56	<div>View</div>
7	admin	169.50 EGP	01/01/2026 03:53	<div>View</div>
8	admin	225.00 EGP	01/01/2026 04:00	<div>View</div>
9	admin	25.00 EGP	01/01/2026 04:08	<div>View</div>
10	admin	270.00 EGP	01/01/2026 04:20	<div>View</div>
11	admin	37.00 EGP	01/01/2026 04:54	<div>View</div>
12	admin	22.00 EGP	01/01/2026 17:08	<div>View</div>

The top of the slide features a decorative header with a dark blue background. It contains several overlapping semi-circular shapes in a slightly lighter shade of blue. Some of these shapes are filled with concentric dotted lines, while others are solid or have thin concentric solid lines.

Customer Side



Categories



Drugs

Medicines for common health conditions and daily care.

[View items](#) →



Products

Daily essentials for personal care and wellness support.

[View items](#) →



Baby Care

Essential products for babies' health, comfort, and hygiene.

[View items](#) →

Services



Services



Blood Pressure


Blood pressure (BP) is the pressure of circulating blood against the walls of blood vessels. Most of this pressure results from the heart pumping blood through the circulatory system. When used without qualification, the term "blood pressure" refers to the pressure in the large arteries.

Contact Information

If you have any questions or need assistance, our pharmacy team is here to help. Feel free to reach out to us through phone, email, or visit us at our location. We are committed to providing reliable support and ensuring you receive the best care and service possible.

Our contact details :

 0100 000 0000

 Dr Abd El-Aziz El-Shennawy, Gameat Al Azhar, Qesm Than Madinet Nasr, Cairo Governorate

 Sat–Thu: 9 AM – 12 AM | Friday: 2 PM – 12 AM

 pharmacy@example.com



Future Enhancements

- **Place** online orders or reservations
- **Integrate** barcode scanning for medicines
- **Automated** alerts and notifications
- **User roles and access control** improvements
- **Mobile-friendly interface / Mobile app integration**
- **Integration with accounting systems and make Transactions**

The End

